

Mr. Phil Isenberg, Chair
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA
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March 17, 2011

Dear Mr. Isenberg,

We appreciate the opportunity to provide comments on the draft Delta Plan. We look forward to working with the Delta Stewardship Council (Council) in the months ahead to craft solutions that provide for environmental restoration of the Delta and that result in more reliable water supplies for the state. We also recognize the importance of protecting and enhancing the cultural and agricultural values of the Delta as an evolving place.

We have attached specific comments and recommendations regarding some of the issues raised in the Council's first staff draft Delta Plan. Our comments are organized under the following topics:

1. Restore the Delta Ecosystem
2. Manage Water Resources for the Public Interest and the Public Trust

Restore the Delta Ecosystem

Since the mid 1990's the Nature Conservancy has been working with federal, state and local governments, other non-governmental organizations and local partners to help set the Delta on a course toward recovery. The Conservancy also has recently completed an analysis of the Delta using our *Conservation by Design* process. This document, our Delta Conservation Plan, summarizes the conservation priorities and strategies that guide the Conservancy's work in the region to achieve a healthy, sustainable system that meets the needs of both people and nature. The conclusions in our Conservation Plan align well with the elements of the Delta Vision Strategic Plan and working documents of the Bay Delta Conservation Plan (BDCP).

We recognize that restoration of the Delta's ecosystem does not mean recreating the historical conditions under which native species lived prior to development. Too much change has occurred in the Delta for that to happen. It does mean restoring ecosystem functions that will create better conditions for multiple species and that can address multiple causes of stress to a system.

We believe that restoring Delta ecosystem functions should focus on three major components:

1. Reconnecting land and water in the Delta and Suisun Marsh
2. Restoring more natural flow conditions in the Delta
3. Reducing water quality contaminants

The Council should define restoration objectives for these three components in the Delta Plan. There is much information in the Delta Vision Strategic Plan and in current processes (BDCP, OCAP, State Water Board Flow Report, Department of Fish and Game Flow Report, Regional Water Quality Board proceedings on waste discharges) that should enable the Council to develop restoration objectives with general time schedules for achieving the objectives.

1. Reconnecting Land and Water

For the last 150 years water and land in the Delta have been effectively separated by a system of levees that now characterize the modern Delta. In places where we can, at the right locations and elevations, we must restore to the extent possible, natural processes recreating tidal marshes, floodplains, riparian corridors and wetlands that will in turn provide a diverse range of biological and physical functions. This must be done informed by the best science available, and must be part of a prioritized strategic plan of restoration that provides the greatest chance of success. The Delta Vision Strategic Plan presents science based objectives and performance measures that detail habitats, extent of habitats and time schedules for implementation. The BDCP process is also working on developing a strategic plan for Delta habitat restoration. While somewhat smaller in scope than that presented by Delta Vision, the BDCP plan is science based and attempts to capture the full array of ecosystem functions that is incorporated within the Delta Vision Plan.

The Council should recognize that there is no single correct number for the quantity of acres to be restored to benefit aquatic species. No scientist will state that 65,000 acres or 100,000 acres is a correct restoration number to fix the estuary. What is known is that more than 90% of estuarine tidal marsh has been lost over the last 150 years, and a significant quantity of acreage will have to be restored to compensate for that loss. Therefore the Council should not focus on trying to find a correct number for restoration, but should rather adopt numbers that have been vetted through a science process, and establish a phasing process for implementation.

Recommendations:

We believe that the best opportunity to develop a strategic plan of restoration is to use information currently being collected through BDCP. Though not perfect or complete, the BDCP restoration plan incorporates the most recent scientific knowledge and acknowledges the importance and use of the adaptive management process, research and monitoring.

The Council should carefully monitor the development of a BDCP restoration plan and use the Independent Science Board to assess the BDCP restoration plan in terms of its potential effectiveness to restore natural processes, its adaptive management component and its implementability. If judged an effective restoration plan and sufficient to meet the coequal objectives, then the Council should consider adopting the restoration element of the BDCP plan into its own Delta Plan as a regulatory element, directing the Delta Conservancy and the Department of Fish and Game to implement the restoration program even in the absence of a BDCP. The Council should also consider adopting elements of the Delta Vision Plan that may not be covered under BDCP to complement the Delta Plan. Appendix 1 provides a list of restoration objectives and time schedules from the draft BDCP restoration plan for the Council's consideration.

2. Restoring More Natural Flow Conditions to the Delta

Restoration of more natural flow conditions falls under two categories:

- A. More natural pattern of Delta inflow and outflow
- B. Reducing reverse flows in the interior Delta

A. More Natural Flow Pattern:

Water Code section 85086 directed the State Water Resources Control Board (State Board) to develop flow criteria for the Delta ecosystem that are necessary to protect public trust resources. The State Board accomplished this task by reviewing existing water quality objectives and using the best available scientific information. Their significant finding is that recent Delta flows are insufficient to support native Delta fishes for today's habitats. They also determined that the effects of non-flow changes in the Delta ecosystem such as nutrient composition, channelization, habitat, invasive species and water quality, need to be addressed and integrated with flow measures.

The Delta Vision Strategic Plan contains recommendations and general performance measures for Delta outflows, San Joaquin River flows and Delta watershed instream flows. Many of the recommendations are directions to state agencies to complete work that will result in flow improvements. Some of the recommendations were carried out since the Plan was completed and many others were not.

The BDCP must address Delta inflow and outflow aquatic species needs as part of the measures needed to conserve target species in development of their Plan. Development of flow measures has been and will continue to be scrutinized by state and federal resource agencies and involved stakeholders engaged in the BDCP process. The Council should advise the BDCP to consider the flow information developed by the State Board in developing their Plan.

Assuming a final BDCP plan is developed that contains Delta inflow and outflow measures sufficient to contribute to the recovery of targeted species, The State Board should initiate a Delta Water Quality Control Plan proceeding that incorporates the updated flow criteria. Subsequently the Board should initiate water right hearings to amend the permits of the State Water Project and Central Valley Project to comply with the new Delta flow objectives and to assess the responsibility of other water right holders to contribute to the Delta flow objectives.

Recommendations:

The Council should include in its Plan a regulatory requirement to the State Board to adopt updated flow requirements in their Bay Delta Water Quality Control Plan sufficient to protect and conserve public trust resources based on the conditions described below.

The Council should closely and carefully follow development of Delta inflow and outflow criteria by the BDCP and advise the BDCP to consider in their analyses the flow recommendations provided by the State Board and the Department of Fish and Game. If the Council, informed by their Independent Science Board, determines that the flow criteria are sufficient to provide for the conservation of desirable species, then the Council should adopt the criteria into their Delta Plan and recommend that the State Board engage in their proceedings to adopt the flow criteria into their Bay Delta Water Quality Control Plan and engage in water right proceedings to implement the flow criteria. If BDCP is not able to develop Delta inflow and outflow criteria sufficient to conserve desirable species, then the Council should require either through regulation or legislative direction

that the State Board initiate Water Quality proceedings to identify flow criteria sufficient to protect the Delta's public trust resources and initiate water right proceedings to implement the flow criteria.

B. Reducing Reverse Flows:

The current water conveyance export system in the Delta is not conducive to promoting a more natural flow system through the Delta. In fact, the system being operated today is a major cause of conflict between desirable aquatic species protection and reliable water supplies exported south of the Delta.

A primary component of the BDCP process is to develop an alternative conveyance system that provides for a more natural flow pattern through the Delta and promotes increased water supply reliability.

Recommendations:

The Council should recognize in their Plan that the current water export system in the Delta promotes degradation of the Delta aquatic environment, contributes to degraded drinking water quality and as a result, cannot provide for more reliable water supplies for users south of the Delta. The Council should state that a new conveyance system is needed, and the Council should require through regulation to DWR and Fish and Game that a new conveyance system be designed and operated to provide for and contribute to the recovery of targeted aquatic species sufficient to achieve the coequal objective of protection, restoration and enhancement of the Delta ecosystem.

3. Water Quality Contaminants

The Bay-Delta system is one of the few estuaries in the world used as a major drinking water supply (State of Bay-Delta Science, 2008). This use results in inherent conflict between providing water quality to meet drinking water and ecosystem long-term goals (Water Code Section 85302(e)(5)). Restoration efforts to create marshes and wetlands affects water quality by producing dissolved and particulate organic matter (natural organic matter – NOM) and perhaps methylmercury. NOM in dissolved and particulate form is an essential component of aquatic food webs. When drinking water that contains NOM is treated with chlorine, disinfection byproducts are formed. Thus NOM is important to ecological systems, but it also adds both cost and human health risk to treated drinking water (State of Bay Delta Science, 2008). As more land in the Delta is restored to marsh and wetlands, we should expect more NOM in the drinking water supply and consequently more conflict between ecological water quality objectives and drinking water quality objectives. However, a new conveyance system that bypasses the Delta or is isolated from Delta waterways can substantially reduce this inherent conflict.

There are other sources of significant point and non-point sources of contaminants that contribute to the degradation of the Delta's aquatic resources. For example, numerous pesticides are found in the Delta, as are elevated levels of selenium, mercury, copper and chemicals typical of human sewage (such as ammonium) and agricultural runoff. The San Francisco Bay and Central Valley Regional Water Quality Control Boards are the primary state agencies responsible for providing for water quality conditions protective of human and aquatic ecosystem uses.

Recommendations:

The Delta Vision Strategic Plan identifies actions to be implemented by the Regional Water Quality Control Boards. The Council should request from the San Francisco Bay and Central Valley Regional Water Quality Control Boards an assessment of actions that have been implemented to ameliorate water quality impacts since the Delta Vision Strategic Plan was completed and the effectiveness of those actions. The Council should also request that the Regional Boards provide a prioritized list of contaminants which most likely impact aquatic resources and drinking water in the Bay-Delta and include activities the Regional Boards are engaged in to control sources of these contaminants. Using this information the Council could focus on developing regulations or recommend legislation to address effective abatement of contamination.

Manage Water Resources

With regard to the elements of the Draft plan that relate to managing water resources, The Nature Conservancy is encouraged by the Council's acknowledgement of a number of critical weaknesses in the current water management of California including, in particular, the recognition that the Delta ecosystem will likely need additional water at appropriate times and places, acknowledgement of the importance of improved groundwater management, and the elucidation of the woeful inadequacy of our current water data collection and analysis systems. We urge the Council to continue in the vein of boldly addressing the real situation that is substantiated by the preponderance of evidence and pursuing similarly bold solutions that are unencumbered by a history of avoidance or deferment.

Beyond the considerations already captured in the Council's Draft Plan, we request that the Council further consider the following specific points regarding the management of water resources for the public interest and public trust.

Tracking Use of Surface Water and Groundwater

The State Board, in their presentation to the Delta Task Force two years ago made it clear that they are not able to account for consumptive use of groundwater or surface water. Lack of this information makes it difficult to manage a water system predicated on a finite water supply and consequently makes it difficult to provide for a more reliable water supply. It is fundamental to effective water management that we have a systematic accounting of water supply and use.

Recommendations:

We recommend that the Council establish a requirement in the Delta Plan that the Water Board engage with the CA Department of Water Resources, to conduct comprehensive water accounting.

- a. The report should include an assessment of the effects of the groundwater use on the Public Trust and surface water rights uses of surface water. The unique water supply effects and

conditions associated with historic and on-going groundwater overdraft should be part of the accounting analysis.

- b. The Water Board should estimate water that is actually consumptively used and water allocated for instream flow standards (and cannot be diverted by water users) that have been established by the Water Board.
- c. Working with the CA Department of Fish and Game, the Water Board should also include an estimate of likely future flow reservation needs for Priority Rivers and Streams.

The Council should request a draft report from the State Board which describes how an accounting system would be developed including measures, schedule and costs by November of 2013 and a final report by May 2014.

Increase Emphasis on Groundwater

While the Council's draft Delta Plan explicitly recognizes that groundwater is part of the Delta water picture, we believe the role of groundwater is still underemphasized. It is often cited that groundwater provides approximately one third of the state's water supply. However, in addition to the water withdrawn directly by pumping groundwater, much of the stream flows that support our freshwater ecosystems and stream flows that are diverted for human uses (and reported as surface water supplies) are themselves derived from groundwater. Therefore, groundwater represents an even greater proportion of our total water supply than the oft-cited "one third." Even further, as groundwater levels drop from continued or increased pumping, more stream flow is lost to the surrounding groundwater, leaving less water in the streams to meet the needs of freshwater ecosystems and people who depend on surface water supplies. The Draft Delta Plan clearly emphasizes that overdraft is a severe concern, but seems to ignore the fact that groundwater withdrawals can, and do, dramatically affect surface water long before a state of overdraft is reached. It is a well-established, though under-reported, fact that many of our groundwater basins, basins that are not in a state of overdraft, obtain much of their recharge from surface streams **and/or** contribute flow to streams (See, for example, USGS 2009; MWH 2006; UWCD and CLWA 1996; Hanson et al. 2003).

Recommendations:

In development of a final Delta Plan, we encourage the Council to emphasize groundwater at a level commensurate with its importance. Accordingly, we encourage the Council to make better understanding of the role of groundwater in the Delta water balance, and in the State water supply as a whole, a prominent feature of their ultimate Delta Plan. As a first step, future versions of the Plan should clearly articulate with no uncertainty that groundwater pumping affects surface flows across the state, not only in places where groundwater storage levels are known to be severely depleted.

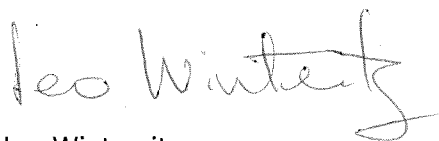
More specifically, an effective Delta plan must include an accurate accounting of groundwater. While we recognize the debate concerning the Board's jurisdiction over groundwater, we recommend that the Council direct the State Water Resources Control Board (or recommend that the Legislature direct the State Board) to develop and implement a comprehensive program for collecting the information needed to understand and manage the groundwater component of the state water supply. Such a plan

would necessarily include rigorous reporting of groundwater use, monitoring of groundwater conditions, and targeted monitoring and modeling to more thoroughly illuminate where groundwater contributes to stream flow and where stream flow is lost to groundwater. To develop and implement such a plan, the State Board should be encouraged to cooperate with the Department of Water Resources, local groundwater management entities (where they exist), and other technical resource entities that can bring the most up-to-date technologies to bear, including the U.S. Geological Survey, the National Aeronautics and Space Administration (NASA), the University of California, and Stanford University.

As the Draft Delta Plan correctly points out, some actions must be taken out of urgency in the absence of full information, and it will take at least a number of years to establish adequate understanding of the groundwater conditions to inform effective long-term management. In view of that delay, the Council should direct or recommend that the Legislature direct the State Board to develop and implement an interim groundwater management program aimed at halting or minimizing further degradation of groundwater conditions – and the accompanying reduction on stream flows in the interim period – prior to a more comprehensive groundwater management program that incorporates the knowledge gained from the comprehensive groundwater accounting plan recommended above.

Thank you for the opportunity to respond to the draft Delta Plan. We look forward to working with the Delta Stewardship Council and Delta stakeholders in successfully addressing these elements during the development and implementation of the Delta Plan.

Sincerely,

A handwritten signature in dark ink, appearing to read "Leo Winternitz". The signature is fluid and cursive, with a large, stylized "L" and "W".

Leo Winternitz
Delta Project Director

REFERENCES

Hanson, R.T., P. Martin, and K.M. Koczot. 2003. Simulation of Ground-Water/Surface-Water Flow in the Santa Clara–Calleguas Ground-Water Basin, Ventura County, California. U.S. Geological Survey Water-Resources Investigations Report 02-4136. pp. 157.

Healey, M.C., M.D. Dettinger, and R.B. Norgaard, eds. 2008. The State of Bay Delta Science, 2008. Sacramento, CA: CALFED Science Program. 174pp.

MWH. 2006. Central Sacramento County Groundwater Management Plan. Prepared for the Water Forum and Sacramento County Water Agency. Prepared by Montgomery Watson Harza. February.

U.S. Geological Survey. 2009. Groundwater Availability of the Central Valley Aquifer, California. Professional Paper 1766. Edited by Claudia C. Faunt.

UWCD (United Water Conservation District) and CLWA (Castaic Lake Water Agency) 1996. Water resources report on the Santa Clara River. United Water Conservation District, Santa Paula, California.

Appendix 1

Restoration Objectives

Aquatic Habitat

Background: The BDCP Habitat Restoration Subcommittee spent approximately 2 years meeting to discuss restoration options in the Delta, Suisun Marsh and the Yolo Bypass. The group carefully scrutinized each zone of the Delta and analyzed what could be done to restore aquatic habitat value relative to the current existing conditions and what habitats existed historically. Species requirements were considered to the extent that information was available. Additionally, the group considered current land characteristics, appropriate attributes and benefits to be derived for each habitat type.

We agree that the BDCP targets are both significant and achievable, but have added an additional 10,000 acres of managed wetlands to bring the overall restoration target to 90,000 acres of aquatic habitat broken down into the following habitat types:

Tidal Marsh restoration up to 65,000 acres: This habitat type once covered approximately 350,000 acres of the Delta and has been reduced by over 90%. Restoration benefits include providing rearing habitat for splittail and salmonids, increased food production and export of food resources to the central Delta and localized improvement in water temperature. Currently there is approximately 140,000 acres of land within the Delta that is at suitable elevations to be restored to tidal marsh. This land runs in an arc from the Cache Slough area, southwest through the Mokelumne/Cosumnes, south along the eastern edge of the Delta, and then south and west of Stockton to Discovery Bay. This is an ambitious but achievable target given the 50 year planning horizon. Tidal habitat has the potential become choked with non native plants and piscivorous fish under certain circumstances. We therefore recommend a staged approach to implementation as described below.

- 10 years, restore 15,000 acres, with focus in high priority areas of Cache Slough and Suisun Marsh
- 15 years, restore additional 10,000 acres with focus in the southeastern Delta. Provided entrainment risks for fish and food resources have been reduced by operation of a new isolated conveyance facility
- 25 years, restore additional 20,000 acres provided existing restored tidal habitat is clearly meeting objectives and are not a detriment to sensitive species
- 45 years, restore additional 20,000 acres provided existing restored tidal habitat are clearly meeting objectives and are not a detriment to sensitive species

Floodplain, restore 10,000 acres: The great Central Valley was once an immense floodplain in the spring months as winter snow melt filled the system. Over 95% of this habitat has been lost to flood protection and reclamation of lands for agriculture. In general, restoration means the reconnection of rivers to their floodplain by setting existing levees back from channel edge. Restoration benefits include providing highly productive rearing habitat for splittail and salmonids, food production and export of food resources to the central Delta and creating additional flood capacity. While the north end of the Delta benefits from the surrogate floodplain habitat of the Yolo Bypass, the south Delta on the San Joaquin River is devoid of floodplain habitat. We recommend that this target focus on the southern end

of the Delta and the corridors of the mainstem San Joaquin, and Old and Middle Rivers near their confluence with the mainstem.

- 10 years, restore up to 5,000 acres. Provided entrainment risks for fish and food resources have been reduced by operation of a new isolated conveyance facility.

- 20 years, restore remaining 5,000 acres

Yolo Bypass floodplain enhancement: To achieve similar benefits of restoring floodplain habitat, the Yolo Bypass should be enhanced to improve its function as a floodplain. Current efforts to explore improving fish passage, making weir improvements and providing mechanisms to achieve more frequent inundation of appropriate magnitude, duration and timing should be pursued.

- 10 years, completion of all structural work to realize enhanced benefits of the Yolo Bypass

Riparian habitat, restore 5,000 acres: The Delta once supported vast area of riparian habitat along river channels and in the upland transition zones. California wide riparian habitat has been reduced by approximately 90%. Benefits of restoring riparian habitat include restoring connectivity between uplands and aquatic systems, food production and temperature reduction. Riparian restoration should be conducted in association with the restoration of tidal and wetlands, seasonally inundated floodplains, and channel margin enhancement, and should focus on reestablishing a greater degree of hydrological connectivity with riparian areas, and naturally promoting the regeneration and establishment of native plants.

- 10 years, restore 2,500 acres of riparian habitat

- 20 years, restore remaining 2,500 to meet the target

Channel margin habitat, restore 40 miles: Delta channels serve as movement corridors for fish species and support splittail spawning and salmonid, sturgeon, and splittail rearing habitat. These channels are now leveed and lack the diversity and complexity of habitat conditions associated with unmodified channels. Increasing the diversity and complexity of channel margin habitats is expected to increase their function and provide spawning and rearing habitat, increased instream cover, reduced predation, and increase the production and export of food resources to the central Delta. Channel margin enhancement actions should be located along channels that serve as primary rearing and outmigration habitat for juvenile salmonids.

- 10 year, restore 20 miles of channel margin habitat

- 20 year, restore 20 miles of channel margin habitat

Seasonal and Managed Wetlands, ensure at least 10,000 acres remain sustainable in the Delta:

Seasonal wetlands, once extensive in the Delta, have been severely reduced by conversion of the Delta to agriculture. Currently, management of 3,000 acres of seasonally flooded land on Staten Island is particularly critical as roosting area for Sandhill cranes but also serves as vital habitat for numerous other species. Given the limited amount of seasonal wetlands in the Delta, it is critical to ensure the ongoing sustainability of existing seasonal wetlands and look for opportunity to expand seasonal wetlands

in the Delta. Currently, numerous public agencies and non-profit organizations own land within the Delta, several of which are interested in transferring ownership. Coordinated ownership and management could improve the sustainability of conserved lands. Benefits of maintaining and expanding managed wetlands include providing foraging and roosting habitat for migratory birds and other aquatic and terrestrial species.

Vernal Pool Complex, restore up to 200 acres:

Terrestrial Habitat

Grassland Communities, restore up to 2,000 acres:

Agricultural habitat, mitigation and preservation: up to 32,000 acres

